AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. **(Original)** A method for testing a laser, comprising:

operating the laser at a first bias setting, the laser having a data rate at the first bias setting of about 10 Gb/s;

measuring a first side mode suppression ratio of the laser output based on a first ratio of highest and next highest optical power peaks as a function of a first wavelength while operating the laser at the first bias setting and at a data rate of about 10 Gb/s;

operating the laser at a second bias setting, the laser having a data rate at the second bias setting of about 10 Gb/s;

measuring a second side mode suppression ratio of the laser output based on a second ratio of highest and next highest optical power peaks as a function of a second wavelength while operating the laser at the second bias setting and at a data rate of about 10 Gb/s; and

generating a test result for the laser in accordance with a difference between the first and second side mode suppression ratios.

2. **(Original)** The method as recited in claim 1, wherein at least one of the first and second bias settings causes the laser to operate substantially within a range of current levels that is at least partially below a threshold current level of the laser.

3. **(Original)** The method as recited in claim 1, wherein each side mode suppression ratio is computed using the following formula:

Side Mode Suppression Ratio = $10\text{Log}_{10}(\text{Peak1}/\text{Peak2})$,

where,

Peak1 = a value of a highest optical power peak, and

Peak2 = a value of a second highest optical power peak.

4. **(Original)** The method as recited in claim 1, wherein one of the first and second bias settings comprises a lower DC current level voltage than the other of the first and second bias settings.

5. **(Original)** The method as recited in claim 1, wherein levels of AC and DC current supplied to the laser at the first bias setting are determined by:

adjusting the DC current supplied to the laser until a desired optical output is achieved; and

adjusting the AC current supplied to the laser until a desired extinction ratio is achieved.

6. **(Original)** The method as recited in claim 5, wherein the AC current is adjusted subsequent to adjustment of the DC current.

7. **(Original)** The method as recited in claim 1, wherein levels of AC and DC current supplied to the laser at the second bias setting are determined by:

adjusting a DC current supplied to the laser until the DC current achieves a predetermined relationship relative to the DC current that was supplied to the laser at the first bias setting; and

substantially maintaining an AC current supplied to the laser at the first bias setting.

8. **(Original)** The method as recited in claim 1, further comprising using the test result in evaluating suitability of the laser for a particular application.

9. **(Original)** A method for testing a laser, comprising:

operating the laser at a first bias setting;

measuring a first side mode suppression ratio of the laser output based on a first ratio of highest and next highest optical power peaks as a function of a first wavelength while operating the laser at the first bias setting;

operating the laser at a second bias setting;

measuring a second side mode suppression ratio of the laser output based on a second ratio of highest and next highest optical power peaks as a function of a second wavelength while operating the laser at the second bias setting;

correlating a difference between the first and second side mode suppression ratios with a measured bit error rate; and

determining a value of an operational parameter for the laser based upon the correlation between the suppression ratio difference and measured bit error rate.

10. **(Original)** The method as recited in claim 9, wherein the operational parameter comprises at least one of: a data rate associated with the laser; and, a transmission length associated with the laser.

11. **(Original)** The method as recited in claim 9, wherein the measured bit error rate is a bit error rate associated with the laser.

12. **(Original)** The method as recited in claim 9, wherein the laser is operated at a data rate of about 10Gb/s during at least a portion of the test.

13. **(Original)** The method as recited in claim 9, wherein at least one of the first and second bias settings causes the laser to operate substantially within a range of current levels that is at least partially below a threshold current level of the laser.

14. **(Original)** The method as recited in claim 9, wherein one of the first and second bias settings comprises a lower DC current level voltage than the other of the first and second bias settings.

15. **(Original)** The method as recited in claim 9, wherein levels of AC and DC current supplied to the laser at the first bias setting are determined by:

adjusting the DC current supplied to the laser until a desired optical output is achieved; and

adjusting the AC current supplied to the laser until a desired extinction ratio is achieved.

16. **(Original)** The method as recited in claim 9, wherein levels of AC and DC current supplied to the laser at the second bias setting are determined by:

adjusting a DC current supplied to the laser until the DC current achieves a predetermined relationship relative to the DC current that was supplied to the laser at the first bias setting; and

substantially maintaining an AC current supplied to the laser at the first bias setting.

17. **(Original)** The method as recited in claim 16, wherein the predetermined relationship comprises one of: the DC current supplied to the laser at the second bias setting is greater than the DC current supplied to the laser at the first bias setting; and, the DC current supplied to the laser at the second bias setting is less than the DC current supplied to the laser at the first bias setting.

18. **(Original)** A computer program product for implementing a method for testing a laser, the computer program product comprising:

a computer readable medium carrying computer executable instructions for performing the method, wherein the method comprises:

causing operation of the laser at a first bias setting, the laser having a data rate at the first bias setting of about 10 Gb/s;

measuring a first side mode suppression ratio of a laser output based on a first ratio of highest and next highest optical power peaks as a function of a first wavelength while operating the laser at the first bias setting and at a data rate of about 10 Gb/s;

causing operation of the laser at a second bias setting, the laser having a data rate at the second bias setting of about 10 Gb/s;

measuring a second side mode suppression ratio of a laser output based on a second ratio of highest and next highest optical power peaks as a function of a second wavelength while operating the laser at the second bias setting and at a data rate of about 10 Gb/s; and

generating a test result for the laser in accordance with a difference between the first and second side mode suppression ratios.

19. **(Original)** The computer program product as recited in claim 18, wherein causing operation of the laser at a first bias setting comprises transmitting at least one control signal that causes operation of the laser at the first bias setting.

20. **(Original)** The computer program product as recited in claim 18, wherein causing operation of the laser at a second bias setting comprises transmitting at least one control signal that causes operation of the laser at the second bias setting.

21. **(Original)** The computer program product as recited in claim 18, wherein at least one of the first and second bias settings causes the laser to operate substantially within a range of current levels that is at least partially below a threshold current level of the laser.

22. **(Original)** The computer program product as recited in claim 18, wherein one of the first and second bias settings comprises a lower DC current level voltage than the other of the first and second bias settings.

23. **(Original)** The computer program product as recited in claim 18, wherein levels of AC and DC current supplied to the laser at the first bias setting are determined by:

adjusting the DC current supplied to the laser until a desired optical output is achieved; and

adjusting the AC current supplied to the laser until a desired extinction ratio is achieved.

24. **(Original)** The computer program product as recited in claim 18, wherein each side mode suppression ratio is computed using the following formula:

Side Mode Suppression Ratio = $10\text{Log}_{10}(\text{Peak1}/\text{Peak2})$,

where,

Peak1 = a value of a highest optical power peak, and

Peak2 = a value of a second highest optical power peak.

25. **(Original)** The computer program product as recited in claim 18, wherein levels of AC and DC current supplied to the laser at the second bias setting are determined by:

adjusting a DC current supplied to the laser until the DC current achieves a predetermined relationship relative to the DC current that was supplied to the laser at the first bias setting; and

substantially maintaining an AC current supplied to the laser at the first bias setting.

26. **(Original)** The computer program product as recited in claim 18, further comprising using the test result as a basis for identifying an optimal data rate for the laser.

27. **(Original)** The computer program product as recited in claim 26, wherein the optimal data rate corresponds to a permissible bit error rate.

28. **(Original)** A computer program product for implementing a method for testing a laser, the computer program product comprising:

a computer readable medium carrying computer executable instructions for performing the method, wherein the method comprises:

causing operation of the laser at a first bias setting;

measuring a first side mode suppression ratio of a laser output based on a first ratio of highest and next highest optical power peaks as a function of a first wavelength while operating the laser at the first bias setting;

causing operation of the laser at a second bias setting;

measuring a second side mode suppression ratio of a laser output based on a second ratio of highest and next highest optical power peaks as a function of a second wavelength while operating the laser at the second bias setting;

correlating a difference between the first and second side mode suppression ratios with a measured bit error rate; and

determining a value of an operational parameter for the laser based upon the correlation between the suppression ratio difference and measured bit error rate.

29. **(Original)** The computer program product as recited in claim 28, wherein the operational parameter comprises at least one of: a data rate associated with the laser; and, a transmission length associated with the laser.

30. **(Original)** The computer program product as recited in claim 28, wherein causing operation of the laser at a first bias setting comprises transmitting at least one control signal that causes operation of the laser at the first bias setting.

31. **(Original)** The computer program product as recited in claim 28, wherein causing operation of the laser at a second bias setting comprises transmitting at least one control signal that causes operation of the laser at the second bias setting.

32. **(Original)** The computer program product as recited in claim 28, wherein the measured bit error rate is a bit error rate associated with the laser.

33. **(Original)** The computer program product as recited in claim 28, wherein the laser is operated at a data rate of about 10Gb/s during at least a portion of the test.

34. **(Original)** The computer program product as recited in claim 28, wherein at least one of the first and second bias settings causes the laser to operate substantially within a range of current levels that is at least partially below a threshold current level of the laser.

35. **(Original)** The computer program product as recited in claim 28, wherein one of the first and second bias settings comprises a lower DC current level voltage than the other of the first and second bias settings.

36. **(Original)** The computer program product as recited in claim 28, wherein levels of AC and DC current supplied to the laser at the first bias setting are determined by:

adjusting the DC current supplied to the laser until a desired optical output is achieved; and

adjusting the AC current supplied to the laser until a desired extinction ratio is achieved.

37. **(Original)** The computer program product as recited in claim 28, wherein levels of AC and DC current supplied to the laser at the second bias setting are determined by:

adjusting a DC current supplied to the laser until the DC current achieves a predetermined relationship relative to the DC current that was supplied to the laser at the first bias setting; and

substantially maintaining an AC current supplied to the laser at the first bias setting.

38. **(Original)** A system for testing a laser, comprising:

a data source configured to transmit a data stream signal;

an evaluation board configured to receive the data stream signal from the data source and to transmit the received data stream signal to the laser;

a test device configured to measure optical output of the laser with respect to wavelength; and

a computer coupled to the evaluation board and the test device, the computer including control software comprising one or more modules for testing the laser by:

causing the evaluation board to operate the laser at a first bias setting;

receiving, from the test device, information associated with operation of the laser at the first bias setting, and using the received information to determine a first side mode suppression ratio of the laser output based on a first ratio of highest to next highest optical power peaks as a function of a first wavelength;

causing the evaluation board to operate the laser at a second bias setting;

receiving, from the test device, information associated with operation of the laser at the second bias setting, and using the received information associated with the second bias setting to determine a second side mode suppression ratio of the laser output based on a second ratio of highest to next highest optical power peaks as a function of a second wavelength; and

generating a test result for the laser in accordance with a difference between the first and second side mode suppression ratios.

39. **(Original)** The system as recited in claim 38, wherein a data stream signal transmitted to the laser has an associated data rate of about 10 Gb/s.

40. **(Original)** The system as recited in claim 38, wherein causing operation of the laser at a first bias setting comprises transmitting at least one control signal that causes operation of the laser at the first bias setting.

41. **(Original)** The system as recited in claim 38, wherein causing operation of the laser at a second bias setting comprises transmitting at least one control signal that causes operation of the laser at the second bias setting.

42. **(Original)** The system as recited in claim 38, wherein the test device is configured to communicate with the laser by way of an optical fiber.

43. **(Original)** The system as recited in claim 38, wherein the laser is configured to, at least indirectly, physically and electrically interface with the evaluation board.

44. **(Original)** The system as recited in claim 38, wherein the test device comprises an optical spectrum analyzer.

45. **(Original)** The system as recited in claim 38, wherein the control software of the computer comprises:

an evaluation board control module;

an optical spectrum analyzer control module; and

a test data evaluation module.